

## **CLAIMS**

**What is claimed is:**

- 1. A method comprising:**

**receiving a request from a first client device to download a file to be transmitted as a plurality of packets of data from a server device;**

**multicasting the plurality of packets to multiple client devices including the first client device;**

**requesting, when the first client has completed download of the file, using a reliable protocol with a second client device from the multiple client devices packets not received by the second client device.**
- 2. The method of claim 1 wherein the multicasting of the plurality of packets comprises multicasting to the multiple clients using a multicast Trivial File Transfer Protocol (TFTP).**
- 3. The method of claim 1 wherein the reliable protocol comprises a Trivial File Transfer Protocol (TFTP).**
- 4. The method of claim 1 wherein the download of the file occurs during a pre-boot phase of the first client device.**

5. The method of claim 4 wherein the file comprises a boot image for the first client device.

6. The method of claim 1 wherein the second client device tracks packet gaps within the requested file and the size of the packet gaps during the multicast of the file.

7. A computer-readable medium having stored thereon instructions that, when executed, cause one or more processors to:

receive a request from a first client device to download a file to be transmitted as a plurality of packets of data from a server device;

multicast the plurality of packets to multiple client devices including the first client device;

request, when the first client has completed download of the file, using a reliable protocol with a second client device from the multiple client devices packets not received by the second client device.

8. The medium of claim 7 wherein the multicasting of the plurality of packets comprises multicasting to the multiple clients using a multicast Trivial File Transfer Protocol (TFTP).

9. The medium of claim 7 wherein the reliable protocol comprises a Trivial File Transfer Protocol (TFTP).

10. The medium of claim 7 wherein the download of the file occurs during a pre-boot phase of the first client device.

11. The medium of claim 10 wherein the file comprises a boot image for the first client device.

12. The medium of claim 7 wherein the second client device tracks packet gaps within the requested file and the size of the packet gaps during the multicast of the file.

13. A system comprising:  
one or more processors;  
a network interface coupled with the one or more processors; and  
computer-readable medium coupled with the one or more processors  
having stored thereon instructions that, when executed, cause one or more  
processors to receive a request from a first client device to download a file to be  
transmitted as a plurality of packets of data from a server device, multicast the  
plurality of packets to multiple client devices including the first client device and  
request, when the first client has completed download of the file, using a reliable

protocol with a second client device from the multiple client devices packets not received by the second client device.

14. The system of claim 13 wherein the multicasting of the plurality of packets comprises multicasting to the multiple clients using a multicast Trivial File Transfer Protocol (TFTP).

15. The system of claim 13 wherein the reliable protocol comprises a Trivial File Transfer Protocol (TFTP).

16. The system of claim 13 wherein the download of the file occurs during a pre-boot phase of the first client device.

17. The system of claim 10 wherein the file comprises a boot image for the first client device.

18. The system of claim 13 wherein the second client device tracks packet gaps within the requested file and the size of the packet gaps during the multicast of the file.